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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,831

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Partho Sarkar

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EXAMINER

ECHELMMEYER, ALIX ELIZABETH

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,831	Applicant(s) SARKAR ET AL.	
	Examiner Alix Elizabeth Echelmeyer	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-18, 20-22, 24-26, 29, 30 and 33-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26, 29, 30 and 33-37 is/are allowed.
- 6) ☒ Claim(s) 2, 5-10, 13, 14, 18, 20-22, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 11, 12 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed January 4, 2010. Claims 2, 3, 5, 9-11, 13, and 14 have been amended. Claims 26, 29, 30, and 33-37 are allowed. Claims 3, 4, 11, 12, and 15-17 are objected to. Claims 2, 5-10, 13, 14, 18, 20-22, 24, and 25 are rejected finally for the reasons given below.

Claim Rejections - 35 USC § 112

2. The rejections of claims 11 and 14 are withdrawn in light of the amendments.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 5-10, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimozu (JP 02-075167) in view of Cochran et al. (US 2004/0072054).

Shimozu teaches a series of concentric solid oxide fuel cells, wherein the air and fuel paths are arranged between every other cell, such that the inner electrode of the inner fuel cell, the outer electrode of the middle fuel cell, and the inner electrode of the third fuel cell are cathodes.

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Shimozu fails to teach the composition of the electrolytes.

Cochran et al. teach a solid oxide fuel cell having as electrolyte yttrium stabilized zirconia, scandium stabilized zirconia, and gadolinium-doped cerium oxide ([0045]).

One having ordinary skill in the art at the time the invention was made could have substituted one or all of the known solid electrolyte materials from Cochran et al. in the fuel cells of Shimozu and the results of the substitution would have been predictable. MPEP 2141 III. Furthermore, it has been held that selection of a known material based on its suitability for its intended use is obvious. MPEP 2144.07

5. Claims 18, 20-22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimozu in view of Hatano et al. (US 2002-0177026) and Du et al. (US 2004/0258972).

The teachings of Shimozu as discussed above are incorporated herein.

Shimozu teaches a base board on which the concentric tubular fuel cells are arranged (abstract).

Shimozu fails to teach the material from which the base board is made.

Hatano et al. teach a metal foam base plate for use with solid oxide fuel cells ([0029]).

Hatano et al. further teach a nickel chrome metal backing sheet, which the skilled artisan would recognize to be oxidation resistant ([0057]).

Hatano et al. teach the electrode laminated to the base foamed-metal structure ([0029]).

The plate of Hatano et al. is desirable since it offers high gas-shielding and energy density at low manufacturing costs ([0006]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the plate of Hatano et al. in the system of Shimozu since the plate of Hatano et al. offers high gas-shielding and energy density at low manufacturing costs.

Shimozu in view of Hatano et al. fail to teach that the solid oxide fuel cells are electrically interconnected to the support plate.

Du et al. teach a metal support plate for electrochemical cell stacks, wherein the stacks are electrically interconnected through the plate, which allows the stacks to be connected to a load ([0032], [0035]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to electrically connect the cells Shimozu to the porous metal foam matrix sheet of Hatano et al. such as suggested in Du et al. since such connection would allow for the cells to be connected to a load.

Allowable Subject Matter

6. Claims 26, 29, 30, and 33-37 are allowed.
7. The following is an examiner's statement of reasons for allowance: the prior art does not teach or fairly suggest the claimed subject matter. Applicant has argued convincingly in the Remarks filed January 4, 2010 that Browall et al. does not teach

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providing a plurality of combustible cores side-by-side. Furthermore, the examiner has not found any other art to support a rejection of this limitation. The examiner finds that the closest art, Sarkar et al. (US 7,452,622) does not qualify as prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Claims 3, 4, 11, 12, and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or fairly suggest the claimed combinations of electrolyte materials. While it is obvious, as discussed above, to select different materials based on those taught in the prior art, the examiner finds that it is not obvious to use the electrolytes as claimed in the configuration as claimed without further motivation that is not found in the prior art.

Response to Arguments

10. Applicant's arguments with respect to claims 2, 5-10, 13, 14 18, 20-22, 24, and 25 have been considered but are moot in view of the new grounds of rejection, see above.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is (571)272-1101. The examiner can normally be reached on Mon-Fri 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1795

aee